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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/590,477

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Amir Barzilay

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01/29/2010

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EXAMINER

HELLING, KAITLYN ELIZABETH

ART UNIT

PAPER NUMBER

3739

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/590,477	<b>Applicant(s)</b> BARZILAY ET AL.	
	<b>Examiner</b> KAITLYN E. HELLING	<b>Art Unit</b> 3739	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8, 12, 16-19, 25-28, 33, 37-39, 48, 54, 70, 301 and 302 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7, 16, 18, 19, 25-28, 37, 39, 54, 70, 301 and 302 is/are rejected.
- 7) ☒ Claim(s) 8, 12, 17, 33, 38 and 48 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/24/2010</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Entry of Amendment***

1. Applicant's Amendment filed on November 09, 2009 has been entered. Claims 1-8, 12, 16-19, 25-28, 33, 37-39, 48, 54, 70, 301 and 302 are currently pending.

### ***Prior Rejections or Objections***

2. The following comments pertain to the rejections or objections in the most recent Office Action mailed on July 08, 2009. The rejection of claims 4-6 under 35 U.S.C. 112, second paragraph are withdrawn in light of Applicant's amendment.

### ***Response to Arguments***

3. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

4. Claims 4, 5, and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4, 5 and 6 recite " further comprising using a wave condenser for condensing said acoustic waves, prior to said transmitting of said acoustic waves through the hair, wherein said gripping comprises positioning the hair and/or said wave condenser" in lines 1-4 of each of the claims. The examiner is unclear as to whether applicant is saying that the wave condenser performs the gripping step or if there are two separate structures gripping and condensing. It appears that applicant means for the wave condenser to perform the gripping step as the wave condenser appears to

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perform the gripping step. The claims will be interpreted as such for the application of art as set forth below.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-3, 7 and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 00/21621 to Iger et al. (Iger).

Regarding claim 1, Iger teaches a method and device for hair removal (title) comprising transmitting acoustic waves through the hair so as to generate heat at a follicle, a dermal papilla, a hair bulge and/or a germinal matrix, said heat being in itself sufficient to damage or destroy said follicle, dermal papilla, hair bulge and/or said germinal matrix (page 19, lines 3-20).

Regarding claim 2, Iger teaches the method of claim 1 as well as further comprising a wave condenser for condensing said acoustic waves, prior to said transmitting of said acoustic waves through the hair (page 17, line 5-page 18, line 10 and page 19, lines 3-20 in that the transducer or horn is acting as a condenser as it is grasping or gripping the hair so as to allow the hair itself to guide the waveform).

Regarding claim 3, Iger teaches the method of claim 1 as well as further comprising gripping the hair prior to transmitting said acoustic waves so as to enhance

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acoustic coupling between the hair and said acoustic waves (page 17, line 5-page 18, line 10 and page 19, lines 3-20).

Regarding claim 7, Iger teaches the method of claim 3 and further comprising pulling the hair so as to effect a detachment of the hair (page 19, line 21-page 20, line 4).

Regarding claim 25, Iger teaches a method and device for hair removal (title) comprising, a transducer (20) for generating ultrasonic waves; characterized in that the device further comprises a wave condenser (the transducer or horn is further acting as a condenser as it is grasping or gripping the hair so as to allow the hair itself to guide the waveform), for gripping the hair to establish acoustic coupling such that said acoustic waves are condensed, transmitted through the hair and generate heat at a follicle, a dermal papilla, a hair bulge and/or a germinal matrix; said heat being in itself sufficient to damage or destroy said follicle, said dermal papilla, said hair bulge and/or said germinal matrix (page 17, line 5-page 18, line 10 and page 19, lines 3-20).

***Claim Rejections - 35 USC § 103***

7. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

8. Claims 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iger.

Iger teaches the device of claim 25, but not the propagation directions of the acoustic waves. However, in light of the lack of any disclosed criticality of the propagation direction of the acoustic waves with respect to the longitudinal axis of the

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hair, it would have been obvious to one having ordinary skill in the art at the time of the invention to have modified Iger to have selected a desired propagation direction as an obvious matter of design choice to achieve the desired result of removing the hair.

9. Claims 16, 18, 37, 39 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iger in view of US 2005/0154332 to Zanelli et al. (Zanelli).

Regarding claims 16 and 37, Iger teaches the method of claims 1 and 25, but not wherein at least one of a frequency, a power density and a duration of transmission of said acoustic waves is selected such that said generation of said heat is such that said heat at said follicle, said dermal papilla, said hair bulge and/or said germinal matrix results in a temperature increment of at least 20 degrees centigrade. However, Zanelli teaches methods and devices for removing hair using focused acoustic energy (title) where the killing of the hair follicle occurs by heating the tissue to a minimum temperature typically 55 degrees centigrade ([0052]). It would have been obvious to one having ordinary skill in the art at the time of the invention to have generated heat of at least 20 degrees centigrade as Zanelli teaches that at least 55 degrees centigrade is required to kill any cells with the follicle or the dermal papilla.

Regarding claim 18, Iger in view of Zanelli teaches the method of claim 16 with Iger teaching the further limitation of the acoustic waves being ultrasound waves (abstract).

Regarding claim 39, Iger in view of Zanelli teaches the method of claim 37 with Iger teaching the further limitation of the transducer being an ultrasound transducer generating ultrasound waves (abstract and page 19, line 3-20).

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Regarding claim 54, Iger in view of Zanelli teaches the method of claim 39 with Iger teaching the further limitation of said wave condenser comprising a chamber configured to receive the hair such that energy of said acoustic waves is transferred to the hair from a plurality of directions (inherent see Fig. 2).

10. Claims 19, 70, 301 and 302 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iger and Zanelli as applied to claims 18 and 39 above, and further in view of Masotti (Masotti).

Regarding claims 19 and 70, Iger in view of Zanelli teaches the method of claim 18 and 39, but not that the ultrasound waves are at a frequency of at least 150 kHz or 500 kHz. Masotti teaches that the use of ultrasound frequencies in the range from a few hundred kHz to a few MHz, and typically from 100 kHz to 10 MHz makes it possible to obtain a focal spot with lateral dimensions which may be up to a few tenths of the millimeter and a longitudinal extension which may be a few millimeters (pg. 5, lines 16-19) this allows the volume affected by the raising of the temperature to be small. Thus the necrosis of the follicle can be achieved with minimal damage, or none at all, to the surrounding tissues (pg. 5, lines 21-23). While Masotti does not specifically teach the frequency of at least 150 kHz or 500 kHz, it has been held that where the general conditions of the claims are met, it is not patentable to discover the optimal range through routine experimentation (see MPEP 2144.05).

***Allowable Subject Matter***

11. Claims 8, 12, 17, 33 and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record does not teach or fairly suggest the acoustic coupling being characterized by selecting a coupling length thus resulting in a temperature increment of at least 20 degrees, that at least one of a frequency, a power density and duration of transmission is selected in order to minimize vibrations of the hair or that the frequency is advantageously off-resonance. The prior art does not suggest that there is any criticality to the coupling length and its effect on the resultant temperature increment. Also, with respect to the minimization of the vibrations, the prior art generally suggests that the vibrations are wanted in order to loosen the hair and therefore do not suggest a minimization of the vibrations. Applicant has disclosed that these large vibrations weaken the hair shaft and reduce its ability to effectively transmit waves to the hair root. This criticality of low frequency vibrations as being beneficial to the transmission of the waves to the hair root is not contemplated by the prior art.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAITLYN E. HELLING whose telephone number is (571)270-5845. The examiner can normally be reached on Monday - Friday 9:00 a.m. to 5:30 p.m. EDT.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Linda C.M. Dvorak can be reached on (571)272-4764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KAITLYN E. HELLING/  
Examiner, Art Unit 3739

/Roy D. Gibson/  
Primary Examiner, Art Unit 3739